

**REMARKS**

In the Office Action filed October 17, 2003, claim 11 was rejected under 35 U.S.C. § 103(a) as allegedly rendered obvious by United States Pat. No. 6,161,357 to Altemus (hereinafter "Altemus"), in view of Japanese document 2001-271363 (hereinafter "Japanese document"); and further rejected under this same section as allegedly anticipated by United States Pat. No. 2,201,110 to Makram (hereinafter "Makram") in view of the Japanese document.

Further, claims 1, 2, 6-10 and 12-13 were rejected under 35 U.S.C. § 103(a) as allegedly rendered obvious by Altemus, in view of Karnas, or United States Pat. No. 4,508,057 to Suzuki (hereinafter "Suzuki") in view of the Japanese document; claims 1, 3, 4, 5, 7, 9, 10 and 12 were rejected under 35 U.S.C. § 103(a) as allegedly rendered obvious by Makram, in view of United States Pat. No. 4,341,489 to Karnas (hereinafter "Karnas") or Suzuki. Applicant respectfully traverses the rejections of record.

Rejection of Claim 11 Under 35 U.S.C. § 103(a)

Claim 11 was rejected under 35 U.S.C. 103(a) as allegedly rendered obvious by either Altemus or Makram in view of the Japanese document. Applicant respectfully traverses this rejection.

Claim 11 is directed to a module for use in assembling an artificial reef comprising a concrete block having top and bottom surfaces and side surfaces, at least one through hole extending through the module from the top surface to the bottom surface which is at least partially filled with concrete that is bonded to the interior walls of the through hole, which concrete columns are comprised of a mixture which is specifically formulated for underwater placement, at least one projection extending away from one of the top and bottom surfaces at a location defined with respect to the location of the through hole, and at least one recess extending into the other of the top and bottom surfaces at a location corresponding to that of the projection (emphasis added).

As noted by Applicant in response to the previous Office Action, and now implicitly recognized by the Examiner, no such artificial reef module is described in or suggested by either Altemus or Makram. Moreover, the combinations of Altemus with the Japanese document or Makram with the Japanese document even if properly made fail to suggest the claimed invention. Altemus merely discloses an interlocking brick wall system, with intersecting vertical and horizontal hollow passageways which may be used for either additional support, or for the installation of plumbing or electrical supply lines. *See Altemus*, col. 2, lines 10-37. Makram discloses a brick or block “for use in general building and wall construction, as well as in the production of refractory or fire bricks adapted for the building of furnaces and for furnace linings.” *See Makram*, col. 1, lines 1-5. The Japanese document discloses a concrete block arranged underwater having a periphery and gap filled with grout. It does not speak of artificial reefs or any such invention – rather, the concrete blocks are for “underwater concrete structure construction” (see Abstract).

Moreover, nothing in the Japanese document teaches that the “grout” used is *specifically formulated for stable underwater placement* as required by claim 11. Indeed, the Japanese document speaks of its advantage as offering “strong, lightweight, and high quality underwater *concrete structure*” (see Abstract) (emphasis added). While the definitions of “grout” adduced by Examiner are insightful, read in light of the Japanese document’s emphasis on the concrete structure of the block itself, they do not speak to a concrete columns “comprised of a mixture which is *specifically formulated for underwater placement*” (as recited in claim 11). “Grout” used as a noun means simply a “thin mortar” for filling spaces or any of other various materials used for a “similar purpose.” The purpose of the concrete columns used in the present invention are not merely to fill a space, but rather accommodate the stable underwater fixation of the blocks. Applicant respectfully disagrees with the Examiner’s claim that the Japanese document teaches “specifically formulated underwater placement concrete.” To assume the word “grout” or the phrase “grout material” as used in the Japanese document

connotes something more complex than filling material is unsupported by the cited art (see Abstract).

Applicant further notes that Makram and Altemus are both directed towards brick/block systems for walls and furnaces, and it would not be obvious to one skilled in the art of artificial reefs, in light of the Japanese document, to read these references together to create a module for use in assembling an *artificial reef*, as that limitation is recited in claim 11.

Accordingly, for at least the foregoing reasons, Applicant respectfully submits that claim 11 is in condition for allowance.

Rejection of Claims 1, 2, 6-10 and 12-13 Under 35 U.S.C. § 103(a)

Claims 1, 2, 6-10 and 12-13 were rejected under 35 U.S.C. § 103(a) as allegedly rendered obvious by Altemus in view of Karnas or Suzuki and the Japanese document. Claims 1, 3, 4, 5, 7, 9, 10 and 12 were further rejected under 35 U.S.C. § 103(a) as allegedly rendered obvious by Makram in view of Karnas or Suzuki and the Japanese document. Applicant respectfully traverses these rejections.

Claims 1, 2, 6-10 and 12-13 are allegedly rendered obvious by Altemus in view of Karnas or Suzuki and the Japanese document. Altemus describes an interlocking brick system for use in the construction of walls. *See Altemus*, Abstract. Both Karnas and Suzuki<sup>1</sup> pertain to artificial offshore reef assemblies that do not describe or suggest the features recited in the claims of the present invention. As mentioned above, the Japanese document discloses no more than a concrete block arranged underwater having a periphery and gap filled with grout. The arguments adduced with respect to the Japanese document's relevance in light of claim 11 apply with equal force here.

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<sup>1</sup> In regards to Suzuki, it is noteworthy that while Suzuki posits the suitability of using unmodified concrete blocks for use in the artificial reef in the abstract, the notion is just as quickly dismissed because "an alkali is necessarily emitted from [concrete] surfaces that is extremely harmful to diatoms and algae as well as fishes and shellfishes." (see Suzuki, abstract). Only when the concrete blocks are chemically and structurally modified are they suitable for use for the purposes of Suzuki (see page 12, column 2, lines 15-55).

It is well-established that “[o]bviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, *absent some teaching, suggestion or incentive supporting the combination.*” In re Bond, 910 F.2d 831, 834 (Fed.Cir.1990) (quoting Carella v. Starlight Archery and Pro Line Co., 804 F.2d 135, 140, 231 USPQ 644, 647 (Fed.Cir.1986) (emphasis added). As Applicant asserted in response to the previous Office Action, there is no “teaching, suggestion, or incentive” in the prior art such that one of ordinary skill in the art would make the combinations which form the basis of the rejections under 35 U.S.C. § 103(a) in the Office Action. This combination of elements between non-analogous sources, i.e., artificial reefs and wall/furnace construction, further combined with the concrete block of the Japanese document, which is used for water-spanning structure construction purposes, is improperly made only with the benefit of hindsight in view of the present application.

With regards to claim 7 in particular, the Examiner asserts that one skilled in the art of artificial reef design would look to the use of fiberglass reinforcing rods to “modify the modified Altemus by making the reinforcing rods out of fiberglass since this would prevent rusting.” See Office Action, p. 4-5. While the use of rust-proof material in underwater construction is a matter of good sense, nothing in the cited art would motivate a person skilled in the art to use fiberglass reinforcing rods. To support an obviousness rejection, the reference must teach, suggest, or incentivize the combination – no references here point to the combined use of fiberglass reinforcing rods with concrete blocks of an artificial reef.

With regards to claims 9 and 10 in particular, the Examiner asserts that “[p]rojections and their corresponding recesses being frustoconical and hemispherical in shape are well known and old in the art” but fails to provide any references to support this contention. See Office Action, p. 6. Neither Altemus, nor Suzuki, Karnas, or the Japanese document show any evidence of the projections and recesses being frustoconical or hemispherical.

Rejection of Claims 1, 3-5, 7, 9, 10 and 12 Under 35 U.S.C. § 103(a)

Claims 1, 3-5, 7, 9, 10 and 12 are allegedly rendered obvious by Makram in view of Karnas or Suzuki and the Japanese document. Makram describes an interlocking brick system for use in the construction of walls. *See Makram*, 1-5. In response to Applicant's assertions, the Examiner asserts that one skilled in the art of artificial reef design would look to the brick/block art for forming an artificial reef where that reef is composed of bricks or blocks. Applicant first respectfully submits that the foregoing arguments apply with equal force here as well. Second, as a practical matter, artificial reef design requires considerations of numerous factors which are wholly irrelevant to the non-marine structural brick/block arts described above. *See Specification*, ¶¶ 2-3. Applicant submits that the field of artificial reef design cannot possibly be considered as analogous art to brick or block designs for use in entirely distinct applications such as basement walls, soil retaining walls, furnaces, or fences.

Moreover, although the Examiner fairly states that an artificial reef may be made of "tires," this does not *per se* make "tire art" analogous to artificial reef art. A prior art reference is analogous if it is from the same "field of endeavor," or, if not within the same field, if the reference is "reasonably pertinent to the particular problem with which the inventor is involved." *See In re Clay*, 966 F.2d at 658-59, 23 USPQ2d at 1060. The Examiner has cited nothing to suggest that "tire art" is reasonably pertinent to the construction of artificial reefs.

Accordingly, because there is no teaching or suggestion towards the cited combination in the prior art, in conformity with the law as recited by the Federal Circuit, Applicant respectfully submits that these references are not properly combined. Applicant accordingly requests that the rejections of claims 1-10, 12 and 13 under 35 U.S.C. § 103(a) be withdrawn, and further respectfully submits that these claims are in condition for allowance.

**CONCLUSION**

In view of the foregoing amendments and remarks, favorable consideration and allowance of claims 1-13 are respectfully solicited. In the event that the application is not deemed in condition for allowance, the examiner is invited to contact the undersigned in an effort to advance the prosecution of this application.

Respectfully submitted,



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